

## IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A nucleic acid molecule, comprising:  
a nucleic acid sequence which encodes a genetically engineered mutant of an *Aequorea coerulescens* non-fluorescent protein of SEQ ID NO: 2 whose amino acid sequence differs from an amino acid sequence of SEQ ID NO: 2 by at least an amino acid substitution at one of residues 222, 220 and 148,  
wherein the substitution is selected from the group consisting of E222G (substitution of Glutamic Acid at residue 222 with Glycine), Y220L, H148T and H148S,  
wherein said mutant has fluorescent properties and an amino acid sequence at least 96% identical, as determined using MegAlign, DNASTAR clustal algorithm, to the *Aequorea coerulescens* non-fluorescent protein of SEQ ID NO: 2.
2. (Previously Presented) A nucleic acid molecule of claim 1, wherein the mutant further comprises one or more amino acid substitutions selected from the group consisting of V11I, N19D, F64L, K101E, E115K, N121S, H148Q, F165L, E172K, E172A, T206A, F221L and K238Q.
3. (Previously Presented) A nucleic acid molecule of claim 2, wherein said nucleic acid molecule encodes a fluorescent protein comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 04, 06, 08, 10, 12, 16, 18, 20, 22 and 24.
4. (Previously Presented) An expression cassette comprising  
(a) a transcriptional initiation region functional in an expression host;  
(b) the nucleic acid molecule according to claim 1; and  
(c) a transcriptional termination region functional in said expression host.
5. (Previously Presented) An expression cassette comprising

- (a) a transcriptional initiation region functional in an expression host;
- (b) the nucleic acid molecule according to claim 2; and
- (c) a transcriptional termination region functional in said expression host.

6. (Previously Presented) A cell, or progeny thereof, comprising the expression cassette according to claim 4 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

7. (Previously Presented) A cell, or progeny thereof, comprising the expression cassette according to claim 5 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

8. (Withdrawn) An isolated fluorescent protein encoded by the nucleic acid molecule of claim 1.

9. (Withdrawn) An antibody binding specifically to the fluorescent protein of claim 8.

10. (Withdrawn) A fusion peptide incorporating the fluorescent protein of claim 8.

11. (Previously Presented) A transgenic cell, or progeny thereof, comprising the nucleic acid molecule according to claim 1.

12. (Withdrawn) A method for labeling or detecting a biological molecule comprising coupling said biological molecule to the fluorescent protein of claim 8.

13. (Withdrawn) A method for labeling or detecting a cell or cell organelle comprising production of the fluorescent protein of claim 8 in the cell.

14. (Previously Presented) A method for detecting a gene expression comprising recombinantly producing a fluorescent protein, which is the mutant encoded by the nucleic acid molecule of claim 1, in a cell.

15. (Withdrawn) An isolated fluorescent protein encoded by the nucleic acid molecule of claim 2.

16. (Withdrawn) An antibody binding specifically to the fluorescent protein of claim 15.

17. (Withdrawn) A fusion peptide incorporating the fluorescent protein of claim 15.

18. (Previously Presented) A transgenic cell, or progeny thereof, comprising the nucleic acid molecule according to claim 2.

19. (Withdrawn) A method for labeling or detecting a biological molecule comprising coupling said biological molecule to the fluorescent protein of claim 15.

20. (Withdrawn) A method for labeling or detecting a cell or cell organelle comprising production of the fluorescent protein of claim 15 in the cell.

21. (Previously Presented) A method for detecting a gene expression comprising recombinantly producing a fluorescent protein, which is the mutant encoded by the nucleic acid molecule of claim 2, in a cell.

22-23. (Canceled)

24. (Previously Presented) An expression cassette comprising  
(a) a transcriptional initiation region functional in an expression host;  
(b) the nucleic acid molecule according to claim 3; and  
(c) a transcriptional termination region functional in said expression host.

25. (Original) A cell, or progeny thereof, comprising the expression cassette of claim 24.
26. (Withdrawn) An isolated fluorescent protein encoded by the nucleic acid molecule of claim 3.
27. (Withdrawn) An antibody binding specifically to the fluorescent protein of claim 26.
28. (Withdrawn) A fusion peptide incorporating the fluorescent protein of claim 26.
29. (Previously Presented) A transgenic cell, or progeny thereof, comprising the nucleic acid molecule according to claim 3.
30. (Withdrawn) A method for labeling or detecting a biological molecule comprising coupling said biological molecule to the fluorescent protein claim 26.
31. (Previously Presented) A method for labeling or detecting a cell or cell organelle comprising recombinantly producing a fluorescent protein, which is the mutant encoded by the nucleic acid molecule of claim 3, in the cell.
32. (Previously Presented) A method for detecting a gene expression comprising recombinantly producing a fluorescent protein, which is the mutant encoded by the nucleic acid molecule of claim 3, in a cell.
33. (Canceled)
34. (Previously Presented) A nucleic acid molecule, comprising:

a nucleic acid sequence which encodes a genetically engineered mutant of an *Aequorea coerulescens* non-fluorescent protein of SEQ ID NO: 2 whose amino acid sequence is SEQ ID NO: 12.